



Expo for Young Scientists

Bright futures. Great rewards.



Get the show on the road for Expo gold

YOUR display is the penultimate hurdle between you and a gold medal at the Eskom Expo for Young Scientists, so if you're hoping to showcase your efforts to the best of your ability, read on for helpful hints concerning presentation.

The judges have nothing more than your display by which to judge your long hours of work. That's not to say that the most colourful display will win or that bells and whistles alone will snap up gold! The judges will be looking for good content, thorough planning, evidence of safe experimentation and accurate information.

On the other hand, there's absolutely no excuse for a sloppy, rushed presentation. Make sure that your display is eye-catching. Colour is important but don't overdo it. For dramatic effect, try choosing two colours at the opposite ends of the colour spectrum — but avoid fluorescent colours. Use one colour for the background or display board, and the other for cards onto which you will paste your information.

Neatness is very important. You should be able to read the title from at least a metre away. Dark lettering is easiest to read. If your handwriting resembles a doctor's scrawl, it may be a good idea to use a stencil or printed labels for headings. You could also cut large letters from magazines or newspapers — but use the same font for all your headings.

Text should be typed if possible, but the judges know that this is not always possible. If you do not have access to a PC or typewriter, copy

your notes as neatly as possible onto clean paper. Your notes should fall under the following headings: Problem, Hypothesis, Experiment, Results and Conclusion. Trim the pieces of paper neatly, then paste them onto coloured cards, leaving a border of about 3cm to 5cm.

When you arrive at the Expo you will have been allocated a table measuring about 1m x 0.5m. Keep these measurements in mind when constructing your display board. The display board should fit comfortably on the table, without any protruding sides.

Use stiff cardboard to construct your display board. If coloured cardboard is too expensive, cover the board with a plain cloth.

Display boards usually consist of three panels: a left, centre and right panel. The left panel is used to display your write-up concerning the problem, hypothesis and experiment. Use the centre panel to display the title and any illustrations, graphs and charts. Your results and conclusion are displayed on the right-hand panel.

Before you glue your notes and photographs, lie the display board on the floor (first make sure the floor is clean) and arrange your notes, drawings, photographs and so on on it. Re-arrange them until you are pleased with the result. Then make a rough sketch of your layout so that you remember where you've placed everything.

Before dismantling your arrangement, use a ruler and a soft pencil to mark out the position of each card, picture and photograph. Remove the cards and, using a glue stick,

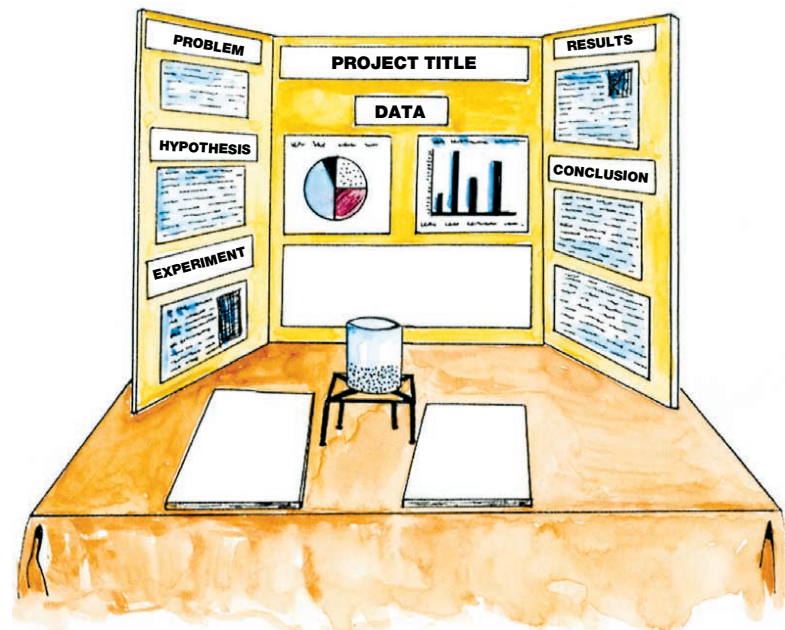


Illustration: NADIA O'BRIEN

attach the information to the display board. Avoid using wood glue or thick paste unless you want your project to resemble a wrinkled peach!

Now stand your display board on a table to check for steadiness — you don't want your board collaps-

ing at a crucial moment during your presentation. If your board is on the wobbly side, try propping it up with a shoe box filled with books or something similar.

Now that your board is ready, the finish line is almost in sight! We suggest that you read next week's edi-

tion of ReadRight for the last instalment in our "winning tips" series for the year. We'll give you some last-minute helpful hints to make sure your Expo presentation is as professional as possible, as well as take you through some emergency procedures and rules.

Extracting a solution

DIFFERENT methods are used to extract the active ingredients from plants and minerals that go into homeopathic medications. Methods of extraction include filtration, evaporation and distillation, which are often used when working with "mixtures".

When you stir salt into sand, you create a mixture. If you taste a bit of this mixture, you'll find that it is salty and sandy. In general, a mixture's properties are a combination of the properties of all the substances. The substances in mixtures are not combined chemically and can be easily separated.

Solutions are mixtures. When a substance (eg. water) dissolves another (like salt) a solution is formed. The water is the solvent and the salt is the solute. When you add sugar to your tea, the sugar is the solute and

the tea is the solvent.

Investigate extraction and purification methods with this experiment:

You will need:

- Salt, sand and water;
- A hot plate;
- Filter paper;
- A funnel;
- A bowl and a small pot.



Method:

1. Mix the salt and sand. Add water — the solvent — to the mixture and stir. The soluble component or solute — in this case salt — dissolves in the water to produce a solution.

2. Pour the mixture through a funnel fitted with filter paper to separate the solution from the sand.

3. Place this solution — now called the filtrate — into a small porcelain bowl or pot and heat over the Bunsen burner or on a hot plate. As the water evaporates, solid sodium chloride (salt) will form.

4. To recover the water from the solution, hold the lid at an angle above the pot (see left). As the water boils, the water vapour will collect on the cool lid, where it will condense, turning back into liquid water. Collect this purified water in a dish.

Adapted from *The Way Science Works* published by Dorling Kindersley and available at good bookstores



Be proactive and change your life with science

THE Eskom Expo for Young Scientists aims to create awareness of the advantages of studying maths and science, which can play a vital role in

influencing educational and career opportunities. Learners are invited to submit original projects to the Eskom Expo for Young Scientists. If you are

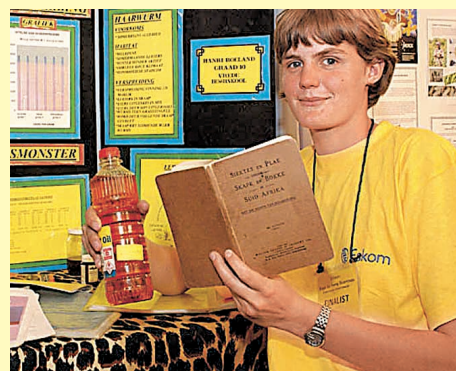
interested in entering, send your details to Malissa Malheiro by faxing her on (011) 883-3011 or e-mailing malissa.malheiro@octagon.com

Hanri's golden fleece

THE use of antibiotics in farming has saved thousands of lives, improved animal health and — more importantly with the world's ever-growing population — increased productivity. But because of overuse, and in some cases misuse, certain bacteria and viruses have become resistant to antibiotics.

For years, the use of antibiotics in livestock farming was reassuring. It allowed us to believe that the foods we were eating were healthy and free of harmful bacteria and viruses. While this was — and is — true, recent scientific research has revealed that the antibiotics fed to animals are still present and active after the animals have been slaughtered. This means that any animal products, including meat and milk, that you put on the dinner table are laden with antibiotics.

But what's the big deal? When antibiotics are ingested they become active in our bodies. For many consumers this is not acceptable — and this, in turn, is bad news for farmers. How can they maintain productivity and satisfy consumer needs? Some farmers are now looking for alternative treatments, including homeopathy, for their animals. Homeopathic medicines are derived



TAKE THIS: 'Best Female' award-winner, Hanri Roeland

from the animal, plant and mineral kingdoms. These extracts are highly diluted to prevent side effects and overdosing. Homeopathy considers the symptoms of disease as the body's attempt to heal itself. Medications that replicate the symptoms are prescribed to gently encourage the body's natural healing process.

For 17-year-old Hanri Roeland, growing up on a farm has inspired her passion for animals and she hopes to be a vet some day. She realised that sheep were becoming immune to certain medications, so she invented an effective yet inexpensive homeopathic alternative. Her project won her the Eskom Best Female award at the Eskom Expo National Finals 2002. Hanri attends Hoërskool Vrede in the Eastern Cape.